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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,983	01/05/2007	Yuichi Kawano	0965-0472PUS1	8160

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EXAMINER	
BERNARD, VIJI	

ART UNIT	PAPER NUMBER
1792	

NOTIFICATION DATE	DELIVERY MODE
01/04/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/582,983	KAWANO ET AL.	
	Examiner	Art Unit	
	Viji N. Bernard	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09/28/2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-9,11 and 12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-9,11 and 12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/15/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 4-6, 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No: 5,874,012 to Kanai et al in view of Japanese Patent No: 08-185997 to Kyoko et al.

Regarding Claim 1, Referring to *(Fig.-1, 5, 6)* Kanai et al teach that a plasma processing apparatus, comprising: gas supply (15,16) means for supplying a gas including a reactant gas to an interior of a chamber (4); pressure control (17, 18, 19, 20) means for controlling an internal pressure of the chamber (Col. 5, Line 2-8); plasma generation means for generating a plasma of the gas in the interior of the chamber (4); and a susceptor (10), installed in a lower portion of the

interior of the chamber, for supporting a substrate (11) to be processed, and further comprising a wall surface protecting member (6) formed in a cylindrical form and provided in the interior of the chamber, for preventing adhesion of a plasma processing-associated product onto an inner wall surface of the chamber (Col. 4, Line 35-67, Col. 5, Line1-29) and the chamber includes a chamber step portion (see Fig. 5) provided to the inner wall surface of the chamber, for supporting the wall surface protecting member (6) from below to cover the inner wall surface of the chamber located above the susceptor (10). Further Kanai et al teach that there is a gap (14) between the outer cylinder (5) and inner cylinder (6) and in the gap, a corrugated plate (30) contacts the outer cylinder and the inner cylinder with a spring force and the contact force between the outer cylinder and the inner cylinder is increased by springs 31, 33 and the corrugated plate 30 for the purpose of absorbing any difference of thermal expansion between the outer cylinder and the inner cylinder (Col. 7, Line 16-37) (Fig.5, 6).

But Kanai et al does not explicitly teach that the wall surface protecting member has a plurality of projections.

However, Kyoko et al teach that the apparatus of the invention substantially as claimed and also teach that the wall surface protecting member (7b, adhesion proof cylinder) has a plurality of projections (7c, overhang partial on upper bed part of adhesion proof cylinder and it is obvious to have the same overhang partial at the lower bed part too), provided on an outer wall surface and in a lower end portion of the wall surface protecting member, for contacting, by point contact, the inner wall surface of the chamber and the chamber step portion, and wherein the wall surface protecting member is supported in the chamber by the point contact for the purpose of preventing the deformation or breakage due to thermal expansion of an adhesion

preventing cylinder and improve the reproducibility of plasma treatment by holding the adhesion preventing cylinder by a specified means (Abstract, Page 4, Paragraph 0025) (Drawings 6-10)

Thus, it would have been obvious to one of ordinary skill in the art at the time applicant's claimed invention was made to have provided the wall surface protecting member has a plurality of projections, provided on an outer wall surface and in a lower end portion of the wall surface protecting member, for contacting, by point contact, the inner wall surface of the chamber and the chamber step portion, and wherein the wall surface protecting member is supported in the chamber by the point contact in Kanai et al in order to preventing the deformation or breakage due to thermal expansion of an adhesion preventing cylinder and improve the reproducibility of plasma treatment by holding the adhesion preventing cylinder by a specified means as taught by Kyoko et al.

***Regarding Claim* 4,** Referring to *(Fig.-1)* Kanai et al teach that the wall surface protecting member is made of a ceramic (Col. 4, Line 49-51).

***Regarding Claim* 5, 6,** Referring to *(Fig.-1)* Kanai et al teach that the wall surface protecting member is made of a metal and the metal is aluminum (Col. 6, Line 57-65).

Regarding Claim 11, Referring to *(Fig.-1)* Kanai et al teach that heating means for heating a wall surface of the chamber (Col. 5, Line 13-20).

Regarding Claim 12, Referring to *(Fig.-1)* Kanai et al teach that the heating means heats the wall surface of the chamber to 100°C or higher (Col 5, Line 15-20, Col 6, Line 1-6).

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No: U.S. Patent No: 5,874,012 to Kanai et al in view of Japanese Patent No: 08-185997 to Kyoko et al as applied to claims 1, 4-6, 11-12 above, and further in view of JP2002222767A to Shibazaki.

Regarding Claims 7, 8, Referring to *(Fig.-2)* Kanai et al and Kyoko et al teach that the apparatus of the invention substantially as claimed.

But Kanai et al and Kyoko et al fail to teach that the wall surface protecting member has a surface oxidized and roughened.

However, Shibazaki teach that the wall surface protecting member has a surface oxidized and roughened for the purpose of suppressing the generation of particles within a vacuum chamber and does not deteriorate the degree of vacuum in the vacuum device (Abstract, Drawings 1-3).

Thus, it would have been obvious to one of ordinary skill in the art at the time applicant's claimed invention was made to have provided wall surface protecting member with oxidized and roughened surface in Kanai et al and Kyoko et al in order to suppress the generation of particles within a vacuum chamber and does not deteriorate the degree of vacuum in the vacuum device as taught by Shibazaki.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No: 5,874,012 to Kanai et al in view of Japanese Patent No: 08-185997 to Kyoko et al as applied to claims 1, 4-6, 11-12 above, and further in view of 07-283143 A to Kazuo et al.

***Regarding Claim* 9,** Referring to *(Fig.-2)* Kanai et al and Kyoko et al teach that the apparatus of the invention substantially as claimed.

But Kanai et al and Kyoko et al fail to teach that the gas supply means is installed while passing through a hole provided in the wall surface protecting member.

However, Kazuo et al teach that the gas supply (8, 9) means is installed while passing through a hole/opening provided in the wall surface protecting member (7b, 71a, 71b) (See Drawing-3) for the purpose of producing plasma in the plasma production room (1)and the hole/opening is for inserting the reactant gas installation tube and come to the center section of the plasma production room (Page 4, Paragraph 0017, Page 7, Paragraph 0038).

Thus, it would have been obvious to one of ordinary skill in the art at the time applicant's claimed invention was made to have provided the gas supply means is installed while passing through a hole provided in the wall surface protecting member in Kanai et al and Kyoko et al in order to produce plasma in the plasma production room and the hole/opening is for inserting the reactant gas installation tube and come to the center section of the plasma production room as taught by Kazuo et al.

Response to Arguments

Applicant's arguments filed 09/28/2007 have been fully considered. Applicant argued that "Katayama and Kanai, however, fail to disclose or suggest that the wall surface protecting member is supported by point contact on a chamber step portion as required in the claimed invention of the present application".

Applicant's arguments are not persuasive because the above limitations was rejected under Katayama in view of Kyoko et al. (JP 08-185997) and Kyoko et al teach that the wall surface protecting member has a plurality of projections, provided on an outer wall surface and in a upper end portion of the wall surface protecting member, therefore it is obvious to have plurality of projections in lower end portion of the wall surface protecting member.

Further, Kanai e al teach a corrugated plate (30) contacts the outer cylinder and the inner cylinder with a spring force and the contact force between the outer cylinder and the inner cylinder is increased by springs 31, 33 and the corrugated plate 30 for absorbing any difference of thermal expansion between the outer cylinder and the inner cylinder. Therefore , it would have been obvious to one of ordinary skill in the art at the time applicant's claimed invention in order to reduce thermal transfer.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Viji N. Bernard whose telephone number is 571-272-6425. The examiner can normally be reached on Mon-Fri 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Viji Bernard
Examiner
Art Unit 1792

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Primary Examiner
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